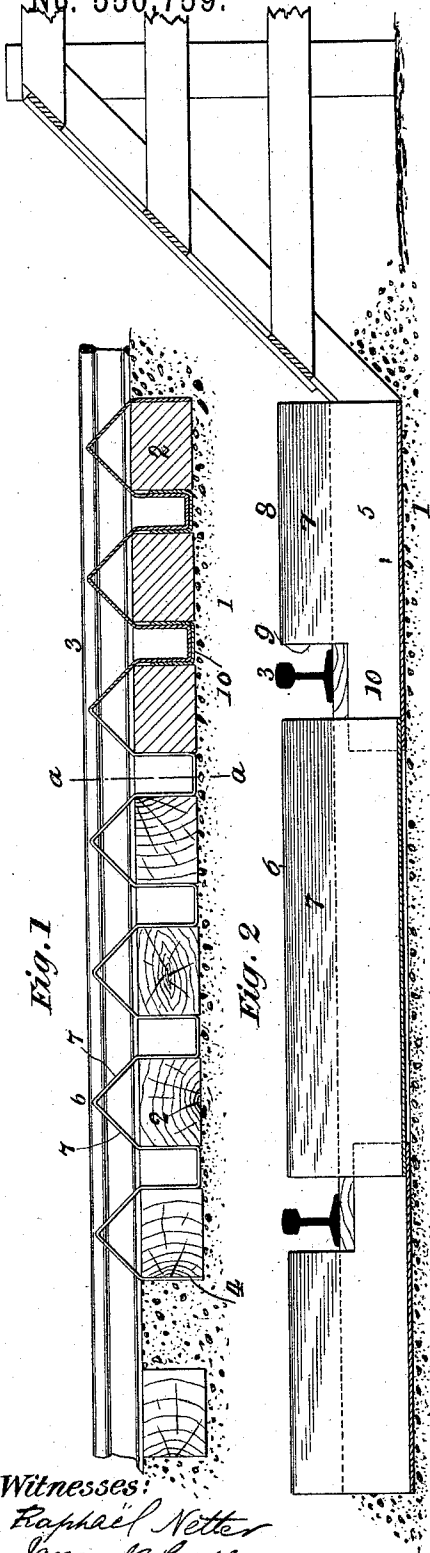


(No Model.)

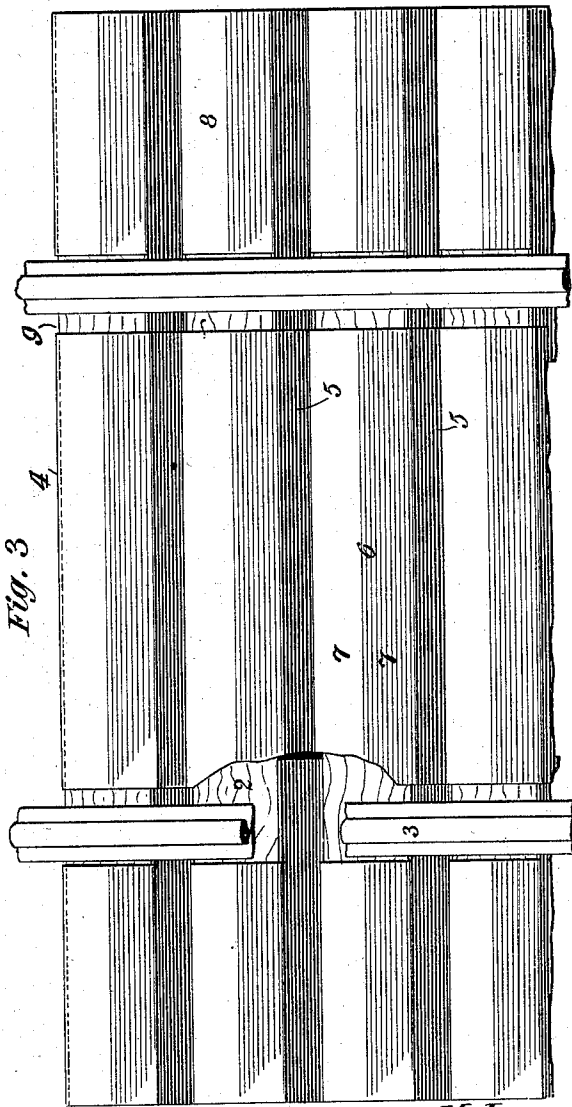
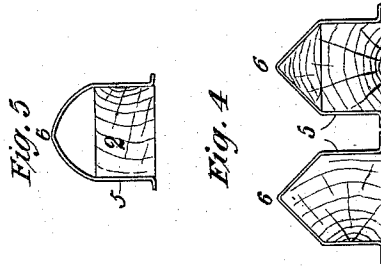
J. M. LEE.
CATTLE GUARD FOR RAILROADS.

Patented Dec. 3, 1895.

No. 550,759.



Witnesses:
Raphael Netter
James W. Catlow.



Inventor: Jacob M. Lee
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UNITED STATES PATENT OFFICE.

JACOB M. LEE, OF HOUSTON, TEXAS.

CATTLE-GUARD FOR RAILROADS.

SPECIFICATION forming part of Letters Patent No. 550,759, dated December 3, 1895.

Application filed November 1, 1894. Serial No. 527,620. (No model.)

To all whom it may concern:

Be it known that I, JACOB M. LEE, a citizen of the United States, residing at Houston, in the county of Harris and State of Texas, have invented certain new and useful Improvements in Cattle - Guards for Railroads, of which the following is a specification, reference being had to the drawings accompanying and forming a part of the same.

10 The present invention relates to that class of road-surface guards which act by their form of construction and arrangement to afford such an insecure, uncertain, or hurtful footing to cattle as will deter such animals from attempting to cross the spaces protected by such guards.

15 The object of the invention is to provide an improved guard of effective form and cheap construction which can be readily secured to the road-bed of a railroad, as well as easily removed therefrom, as in case of needed repair, or for other purposes.

20 The invention consists, in combination with the ties of the road-bed, of a sheet-metal covering for said ties, which covering extends down between and up the sides of the ties, thus forming conduits or passages between the ties and over the top of the ties in an angular form, so as to produce a series of slanting or beveled surfaces.

25 The invention also consists of a special form and arrangement of said sheet-metal covering or sheathing, whereby the same is conveniently applied to a road-bed and to the outside edges thereof—that is, outside of the rails—as well as between them.

30 Referring to the drawings, Figure 1 shows a side elevation of road-bed provided with my improved guard, a portion of this view also showing the ties of the road-bed and the guard mounted thereon in longitudinal section. Fig. 2 is a cross-section of the road-bed, as on plane *a a* of Fig. 1. Fig. 3 is a plan view of the guard. Figs. 4 and 5 show modified forms of road ties and guards.

35 Referring to the views in detail, 1 represents the earth or stone work of the road-bed. 2 the ties laid thereon, and 3 the rails secured to the ties.

40 4 is the central section of the cattle-guard or that part thereof which is secured to the road-bed between the rails. This guard con-

sists of sheet metal of suitable thickness which is bent into shape to produce the troughs 5 of size substantially that of the space between the ties, and also shaped to produce the peak-ridges 6, composed of the two slanting sides 7, of angular form, as shown, though they may be of other shape in cross-section. The ties under this guard are spaced apart a trifle less than the thickness or size of the hoofs of cattle or horses.

45 The essential feature of the peak or angular ridge part of the guard-plate is that it has practically no horizontal surface that might afford a footing for an animal attempting to cross the space covered by the guard. Instead of the angular form of peak-ridge shown in Figs. 1 and 3, these ridges may be of other shape, such as the curved shape shown in Fig. 5. The space beneath these peaks may be open, as shown in Fig. 1, or the tie may be shaped to fill the entire space under the guard, as shown in Fig. 4, or a block-piece may be inserted beneath the peak and lie upon the upper face of the tie, as also seen in Fig. 4. This is for the purpose of preventing injury to the guard, as from shocks from falling brake-rods or similar causes. Preferably this central section of the guard, as well as the separate side sections, would consist of a single strip or sheet of metal formed as indicated; but, if desired, either section of the guard may be subdivided in two or more parts—for example, as seen in Fig. 4, where each tie is provided with a guard which is separate from but joined to or abutting the guards of adjacent ties.

50 The guard is to be secured to the ties by nailing the same down or by any other suitable means of attachment. The conduit or trough 5 furnishes a means for draining the track and keeping the spaces between the ties open.

55 8 indicates similar sheet-metal guards placed along the outside edges of the road-bed and upon the ends of the ties. Each of the guards is cut away at its inner end, as seen at 9, for the purpose of leaving a space for the rails 3. This cut-away, however, extends vertically only to just below the rail, (see Fig. 2,) while the trough portion 5 of these side guards is continued along under the rail by the trough-section 10, which section is inserted

in or under the corresponding trough portion of the section of the guard, which is located between the rails. By these means the trough or channel between the ties is continuous from one side of the road-bed to the other; also, the whole ground area of the track protected by the guard is covered, thus shutting off growth of grass and weeds and leaving the guard well exposed.

10 The action of this guard will now be apparent. The foot of an animal stepping on the guard will find no secure or horizontal footing, and the toes accordingly will slip on the sides of the peaks and into the channel or channels between and be confined in such a way as to prevent the backward action of the ankle-joint, and thus to cause the animal to stand on its toes, as it were, and this without inflicting any injury, but deterring the animal from further progress across the guard.

What is claimed as new is—

1. A surface cattle guard for roadbeds, consisting of a series of cross ties or guard supports arranged across the roadbed and separated by an open trough space somewhat less

than the size of the hoofs of cattle, and a metal plate or plates lying upon the sides of the ties and the ground or roadbed between the same and shaped to a bevel or angular ridge along the tops of the ties, substantially as and for the purpose set forth.

2. In combination in a surface cattle guard for roadbeds, the cross ties 2 spaced as and for the purpose described, the middle and side guard plates 4 and 8 arranged on and between the ties to form the troughs 5 and ridges 6, and the trough continuations 10 between the plates, substantially as set forth.

3. In combination, the roadbed and ties 2 arranged thereon, as described, the middle and side guard plates lying on the sides of the ties and the roadbed between and forming troughs 5 and ridges 6; a rail 3 supported on said ties, and trough continuations between said guard plates and under said rail, as and for the purpose set forth.

JACOB M. LEE:

Witnesses:

R. E. L. SWANSON,

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